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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,091	10/22/2003	Chandra Sekhar Namuduri	GP-303337	4786

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EXAMINER

SCHWARTZ, CHRISTOPHER P

ART UNIT PAPER NUMBER

3683

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,091

Applicant(s)

NAMUDURI ET AL.

Examiner

Christopher P. Schwartz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

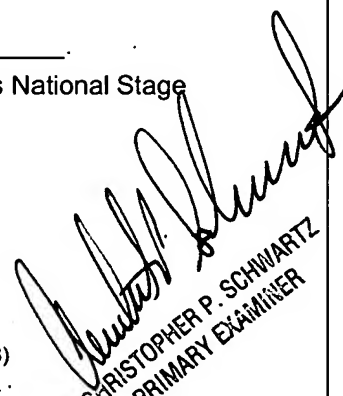
- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.


CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements have been received and considered.

Election/Restrictions

2. Applicant's election of Species A (figure 1) in the reply filed on 12/8/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
3. Claim 22 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/8/05.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5,8,10-14,17,19,20,21 rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan in view of Lou et al. and Carlson '239.

Regarding claims 1,12,21 Hogan discloses in figure 5 an absorber, similar in structure to that of applicants. Hogan shows a threaded shaft at 71, rotor plates 82 in direct contact with the shaft via rotating nut assembly 76 and stator plates 83 secured to housing 70 and interleaved with the rotor plates 82.

Hogan lacks using a magnetorheological fluid and an externally threaded shaft "in communication" with a sealed housing. Note however the threaded shaft in the several embodiments.

Lou et al. discloses a similar device in structure to that of Hogan. As previously discussed Lou et al. discloses a screw type fluid damper including thrust shaft 41 having a screw nut mechanism (see the discussion in col. 4, particularly lines 36-41 for known types of equivalent screw nut mechanisms) in threaded communication with a sealed housing 29. Note the rotor 26 which is connected to a threaded surface of the shaft 41 via the screw-nut mechanism at 11 and the stator at 29. The stator and rotor elements 26,29 are considered to also comprise the interleaved plates at 21,22

Although Lou et al. lacks using a magnetorheological fluid as the damping medium it is known to substitute magnetorheological fluids for electrorheological fluids simply dependent upon the damping properties desired or for convenience.

Carlson '239 teaches a magnetorheological fluid devices are well known in the art. See the discussion in column 5 lines 5-11. Note also the use of permanent magnets in the several embodiments (see elements 60 and 242) and the magnetic field lines in figures 16 and 28. It is known in the art to interchange electromagnets/coils with permanent magnets dependent upon cost, desired field strength (constant vs. variable), desired safety conditions, power consumption required, etc.

The ordinary skilled worker in the art at the time of the invention would have found it obvious to have modified the stator elements of Hogan to include permanent magnets for generating a magnetic field in a magnetorheological fluid as claimed since the substitution of a magnetorheological fluid for an electrorheological fluid is known in the art (see Carlson col. 5 lines 5-11 and 22-27).

Regarding claims 2-5,8,14,17 these limitations are fairly suggested by the combined teachings of Hogan as modified by Lou et al. and Carlson.

Regarding claims 10,11,13,19,20 to have spaced the rotor and stator plate elements of Hogan, as modified, or to have varied their respective numbers, to the claimed dimensions and requirements would have been obvious dependent upon the desired shear force (i.e. level of rotational damping desired).

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7. Claims 6,7,9,15,16,18 rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan in view of Lou et al. and Carlson '239 as applied to claim 1 above, and further in view of Weiss et al. '184.

Regarding claim 6,15 note Carlson in col 5 describes known types of magnetorheological fluids which may be used. One of these such fluids is to Weiss et al.

Weiss et al. '184 (same inventor, different patent number) teaches such a fluid.

One having ordinary skill in the art at the time of the invention would have found it obvious to have selected the fluid of '184 simply dependent upon the damping properties desired.

Regarding claims 7,9,16,18 such a selection of fluid with the claimed properties would simply amount to an alternate equivalent selection taught by Hogan, as modified by Lou et al., Carlson and Weiss et al. '184, dependent upon the damping characteristics desired.

8. Claim 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Namuduri et al. in view of Gordaninejad et al..

Regarding claim 22 Namuduri et al. discloses a shock absorber similar to applicants in figure 4A.

Namuduri et al. Lacks a specific showing of the claimed shape of flow channels.

Gordaninejad et al. Teaches that such shapes are known in the art (see col. 8 lines 25-32).

To have modified the flow passages of the piston shown in figure 4A of Namuduri et al. with either of the claimed shapes and cross-sectional area ratio, as required in claim 22, would have been obvious to the ordinary skilled worker in the art, as suggested by Gordaninejad et al., simply dependent upon the damping characteristics desired for a particular load supported.

Response to Arguments

9. Applicant's arguments filed 12/8/05 have been fully considered but they are not persuasive.

Applicant's main argument seems to be that no prima facie case of obviousness has been made with respect to the rejected claims because the modifying reference to Lou does not (in applicant's view) teach a threaded shaft, that's capable of axial movement, in communication with a housing.

The examiner maintains that Lou teaches a threaded shaft that is in threaded engagement with a stator housing 29,38, that moves linearly, and in the process rotates the rotor and rotor plates 26,21.

Applicant's arguments to these points are somewhat confusing given that the invention, as discussed in the specification, is directed to the spacing and arrangement of the rotor and stator plates and how the yield stress of the MR fluid may be varied (permanent magnets vs. electromagnets). In the second embodiment, no "screw type" MR fluid damper is shown, but rather the emphasis is on the shape of the piston, namely the starburst shaped flow channel 76.

On page 5 of their specification applicant's mention the screw type MR fluid damper almost in passing – stating “the screw type MR fluid damper described herein is desirable for vertical loads requiring high resistance”.

This seems to indicate that 1) such “screw type” MR fluid dampers are known and 2) that they are application specific.

This is precisely what the combined teachings of Hogan and Lou teach—that such threaded linear to rotary shaft connections in “screw type dampers” are known—or that some obvious alternative mechanical equivalent is known, as in the case of applicants.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

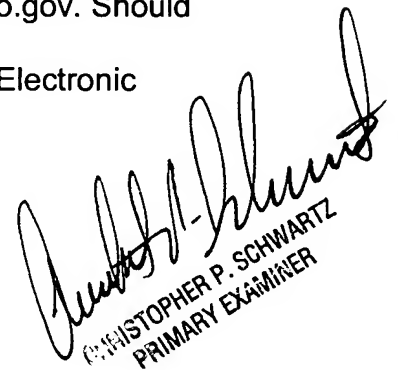
11. As stated previously it is recommended applicants review the differently known types of direct rotor-shaft connections in the prior art made of record before preparing a response to this action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Schwartz whose telephone number is 571-272-7123. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Jim McClellan can be reached on 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cps
2/13/06


CHRISTOPHER P. SCHWARTZ
PRIMARY EXAMINER